

10. Remy

Program Name: Remy.java

Input File: remy.dat

The IT department of the store where Remy is working has been having some issues with their website recently. Remy has been tasked with analyzing their log file to gather some data. There are five (5) items to report: the total number of requests listed in the log file, the number of unique IP addresses that made requests, the IP address that made the most requests and the number of requests it made, the percentage of requests that resulted in an error status code (4xx or 5xx), and the most requested URL and the number of times it was requested.

Input: The data file consists of an unspecified number of lines in the following format:

```
[Timestamp] IP_Address HTTP_Method URL Status_Code
```

- **Timestamp:** The date and time of the request in the format YYYY-MM-DD HH:MM:SS.
- **IP_Address:** The IP address of the client making the request.
- **HTTP_Method:** The HTTP method used (e.g., GET, POST, PUT, DELETE).
- **URL:** The URL that was requested.
- **Status_Code:** The HTTP status code returned by the server (e.g., 200 for OK, 404 for Not Found, 500 for Server Error).

Output: see sample output below for required wording and formatting

- Print the total number of requests.
- Print the number of unique IP addresses.
- Print the most frequent IP address and the number of requests it made.
- Print the error rate as a percentage, rounded to two decimal places.
- Print the most requested URL and the number of requests it received.

Sample input:

```
[2024-10-27 10:00:00] 192.168.1.1 GET /index.html 200
[2024-10-27 10:00:05] 192.168.1.2 POST /login 200
[2024-10-27 10:00:10] 192.168.1.1 GET /index.html 200
[2024-10-27 10:00:15] 192.168.1.3 GET /products 404
[2024-10-27 10:00:20] 192.168.1.1 GET /about 200
[2024-10-27 10:00:25] 192.168.1.4 POST /submit 500
[2024-10-27 10:00:30] 192.168.1.2 GET /index.html 200
```

Sample output:

```
Total requests: 7
Unique IP addresses: 4
Most frequent IP address: 192.168.1.1 (3 requests)
Error rate: 28.57%
Most requested URL: /index.html (3 requests)
```